REMARKS

Applicants acknowledge the allowance of claims 9 and 11 -14. Applicants note, however, that the application currently also contains a claim 15, which depends from allowed claim 14. Accordingly, it is assumed that the Examiner intended to allow claim 15 as well, since the application contains no grounds for rejecting that claim. If this assumption is incorrect, clarification is respectfully requested.

Two minor amendments have been made to the specification to correct typographical errors, at page 10, line 4 and in Table 2 on page 7.

Applicants acknowledge that this application is currently under final rejection. Accordingly, a Request for Continued Examination has been submitted herewith, together with the appropriate fee, and further examination based on the revisions made in the foregoing amendment is respectfully requested.

Claims 1 and 6-8 have been rejected under 35 USC §103(a) as unpatentable over Hughes et al. (U.S. Patent No. 6,747,971) in view of Joo et al. (U.S. Patent No. 5,963,552). However, this ground of rejection has been rendered moot by the cancellation of claims 1 and 6-8 in the foregoing amendment. The following comments are directed to new claims 16-22, which are believed to distinguish over the cited references, for the reasons set forth.

A packet switch includes a number of ingress means and number of egress means. Each ingress means is allocated a multicast rate that sets the rate at

which multicast cells may be transmitted by that ingress means. The multicast rate is indicated by a periodic multicast send opportunity spaced apart by a number of cell periods, which number is determined in accordance with the allocated multicast rate. The higher the allocated multicast rate, the more frequent the indicated multicast send opportunities will be. (See Fig. 1a.)

Most often, it will not be possible for all ingress means to transmit their multicast cells in the indicated cell periods, so that the multicast opportunities must be scheduled to fit within the available cell periods. This is achieved by delaying certain send opportunities, as illustrated in Fig. 1b. In the described embodiment, the constraints applied are: (i) that no multicast cells may be delayed to such an extent that it would clash with a next indicated multicast send opportunity for the same ingress means, and (ii) no multicast send opportunity may be delayed by more than one cell period. While ideally only one send opportunity will be scheduled per cell period, the constraints applied to the scheduling mean that two multicast send opportunities are scheduled in cell period 12.

The remainder of the description, and Fig. 2, address the operation of the packet switch according to the invention when more than one multicast send opportunity is scheduled in a certain cell period. In the disclosed example, ingress means 1 has top priority, since to delay transmission of the multicast cell from ingress means 1 into cell period 13 would mean that it would clash with the next indicated multicast send opportunity in cell period 13. All of the fanout of

the ingress mean 1 is scheduled in cell period 12. (See Fig. 2e.) Ingress means 6 has the next highest priority, as it is also scheduled for that cell period, but would not clash with its next indicated multicast send opportunity if delayed to the following cell period 13. As large a portion as possible of the fanout of the multicast cell of ingress means 6 is scheduled for cell period 12 (Fig. 2e). The remainder of the fanout will be eligible for scheduling in the following cell period 13. Remaining ingress means are then examined in a round-robin fashion to identify any remainders of multicast fanouts which have not yet been scheduled, but can fit in the schedule of Fig. 2e, being communication to egress ports not already scheduled in that cell period.

Optionally, eligibility bits (Fig. 2c) may be used to identify which ingress means are eligible to have their multicast transmissions scheduled during a current cell period. Also, the egress means may be allocated egress credit (Fig. 2b). Egress means are ineligible for scheduling when they have a zero egress credit.

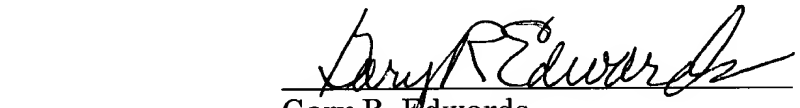
Priority for the various ingress means is allocated to the ingress means based on i) whether the ingress port is scheduled (Fig. 1b) for a multicast send opportunity in a particular cell period; and (ii) whether any further delay to the ingress means would cause a current multicast send opportunity to clash with a next multicast send opportunity for that ingress means.

Claims 16-22 distinguish over Hughes et al. and Joo et al. at least in the features relating to multicast send opportunity scheduling and priority allocation. Hughes et al. merely uses a pointer to indicate a preference to multicast traffic, a preference for unicast traffic, or a preference alternating between these two; and a round robin pointer is used to select which of the preferred type of transmission will be scheduled next. There is no sense of allocating a priority, nor of carrying over part of a fanout from one cell period to the next. Hughes has the luxury of a separate switch plane for each multicast transmission, while the present invention seeks to optimize use of a single switch plane. Accordingly, applicants respectfully submit that claims 16-22 are allowable.

If there are any questions regarding this response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 038819.49955).

Respectfully submitted,



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